3.16 Section 4(f) and 6(f) Resources (Public Parks and Recreation)

Section 4(f) and 6(f) resources analyzed in this Program EIR/EIS include publicly owned parklands, recreation lands, wildlife and waterfowl refuges, and historic sites that are covered by Section 4(f) of the DOT Act of 1966 and Section 6(f) of the Land and Water Conservation Fund Act of 1965. This section describes the existing Section 4(f) and 6(f) resources within the Bay Area to Central Valley region and identifies the potential uses of and potential impacts on Section 4(f) and 6(f) resources for each alignment alternative[1]. In this program-level environmental document, the potential uses of Section 4(f) and 6(f) resources are identified and compared for the alignment alternatives being considered, while detailed evaluation is deferred to future project-level environmental analyses, when site-specific information would be available for project alignment alternatives and station location options. See Section 3.12 also for analysis of historic and archaeological resources. See Chapter 7 for information on Network Alternatives.

3.16.1 Regulatory Requirements and Methods of Evaluation

A. REGULATORY PROVISIONS

Section 4(f)

Federal law 49 USC § 303, formerly Section 4(f) of DOT Act of 1966 (49 USC § 303), states the following:

(a) It is the policy of the United States government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

(b) The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.

(c) The Secretary may approve a transportation program or project (other than any project for a park road or parkway under Section 204 of Title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if--

(1) there is no prudent and feasible alternative to using that land; and

(2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Implementing regulations recently issued by the FHWA and FTA describe the appropriate documentation of Section 4(f) in a programmatic (Tier I) EIS: "When the first-tier, broad-scale EIS is prepared, the detailed information necessary to complete the Section 4(f) approval may not be available at that stage in the development of the action. In such cases, the documentation should address the potential impacts that a proposed action will have on Section 4(f) property and whether those impacts could have a bearing on the decision to be made." [23 CFR 774.7(e)(1)]

[1] See Section 3.0, Introduction, for an explanation of how this section fits together with the HST Network Alternatives presented in Chapter 7, as well as for an overview of the information presented in the other chapters.

Similarly, CEQA requires agencies to consider the impacts of projects on parks and recreational resources and California law requires a state agency that proposes a project which may result in adverse effects on historical resources listed or eligible for listing in the NRHP or the CRHR to consult with the State Historic Preservation Office and to identify feasible and prudent measures that would eliminate or mitigate the adverse effects (California Public Resources Code §§ 5024 and 5024.5; CEQA Guidelines § 15064.5, and Appendix G.)

Section 6(f)

State and local governments often obtain grants through the Land and Water Conservation Fund Act to acquire or make improvements to parks and recreation areas (16 U.S.C. §§ 460-4 through 460-11, September 3, 1964, as amended 1965, 1968, 1970, 1972–1974, 1976–1981, 1983, 1986, 1987, 1990, 1991, 1993–1996). Section 6(f) of the act prohibits the conversion of property acquired or developed with these grants to a nonrecreational purpose without the approval of the U.S. Department of the Interior's (DOI's) National Park Service. Section 6(f) directs DOI to ensure that replacement lands of equal value (monetary), location, and usefulness are provided as conditions to such conversions. Consequently, where such conversions of Section 6(f) lands are proposed for transportation projects, replacement lands must be provided.

California statutes similarly require replacement lands. The California Public Park Preservation Act of 1971 (California Public Resources Code § 5400 *et seq.)* provides that a public agency that acquires public parkland for nonpark use must either pay compensation that is sufficient to acquire substantially equivalent substitute parkland or provide substitute parkland of comparable characteristics.

B. METHOD OF EVALUATION OF IMPACTS

This program-level evaluation of potential impacts on Section 4(f) and 6(f) resources focuses on identifying existing historical, cultural, parkland, and wildlife resources, and potential uses of and impacts on these resources under the No Project and HST alternatives. The goal at this tier of environmental analysis is to identify Section 4(f) and 6(f) resources on or close to the proposed HST Alignment Alternatives and to assess the relative differences in potential impacts of the alignment alternatives on these resources. At this stage of environmental review, it is not practical to study or measure the severity of each potential impact identified. No fieldwork was conducted as part of this analysis, and no Section 4(f) determination is practical or required for this Program EIR/EIS. At the conclusion of this program environmental process, corridor alignments and station locations may be selected for further design and environmental review; however, no construction and therefore no uses of Section 4(f) and 6(f) resources will be approved. In subsequent project-level analysis, Section 4(f) and 6(f) resources, potential uses and impacts, and appropriate avoidance and mitigation measures would be evaluated in detail and determinations made.

Various sources were consulted to identify potential resources in each corridor, including available databases, studies, and other documents. These documents are listed in the references chapter of this document. To identify and quantify the potential impacts by resource type, the improvements included under each alignment alternative (HST Alignment Alternatives and HST station location options) were overlaid on available databases and maps. Two types of potential impacts on Section 4(f) and 6(f) resources were identified: direct and proximity.

- Direct Impact: A physical feature of a proposed improvement would directly intersect with a portion or all of the resource and require the use of property from that resource.
- Proximity Impact: A physical feature of a proposed improvement has the potential to impact the resource as a result of its proximity to the resource.

Potential impacts were assigned a qualitative ranking of high, medium, or low based on the proximity of the resource to the centerline of the proposed improvement. The rankings are summarized in Table 3.16-1.

Table 3.16-1
Rankings for Potential Direct and Proximity Impacts on Section 4(f) and 6(f) Resources

Ranking	Distance of Resource from Alignment Centerline	Potential Impact
High	0 to 150 ft (0 to 46 m)	Direct
Medium	150 to 450 ft (46 to 137 m)	Proximity
Low	450 to 900 ft (137 to 274 m)	Proximity

Potential uses of historical sites under Section 4(f) and 6(f) were assigned a qualitative ranking of high, medium, or low. This is based on the total number of sites within the APE of each alignment alternative being divided by the total length of the alignment alternative being evaluated to arrive at an average number of sites (or proportion of sites) per mile. The APE is defined in Section 3.12, "Cultural Resources and Paleontological Resources."

That average was then translated to the qualitative rankings of high, medium, or low impacts as follows:

- Low: 0.00-0.25 sites per mile.
- Medium: 0.26-0.75 sites per mile.
- High: More than 0.76 sites per mile.

3.16.2 Affected Environment

A. STUDY AREA DEFINED

The study area for the analysis of Section 4(f) and 6(f) resources encompasses the area within 900 ft (274 m) on either side of the centerline of each alignment alternative and within a 900 ft (274 m) radius of the stations for each alternative.

Because the proposed HST system would cross urbanized, developed, and rural areas, a variety of Section 4(f) and 6(f) resources could be affected. The proposed HST alignment alternatives were developed with the intent of avoiding these resources to the extent feasible. However, there are potential locations within the proposed HST system where Section 4(f) and 6(f) resources would not be avoided. These are discussed in the environmental consequences section below.

B. GENERAL DESCRIPTION OF SECTION 4(f) AND 6(f) RESOURCES

Section 4(f) and 6(f) resources refer to publicly owned lands of a park, recreation area, or wildlife and waterfowl refuge or to land of a historical site of national, state, or local significance (as determined by the federal, state, regional, or local officials having jurisdiction over the park, recreation area, refuge, or site).

Historically, urban and suburban development follows the establishment of transportation corridors and facilities. In California in the late nineteenth and early twentieth centuries, most cities formed around ports and rail lines, the primary modes for transporting people and goods. After World War II, in the early 1950s, highways and the automobile became the dominant mode of transportation,

bringing urban and suburban development to areas along highways that were formerly farm-to-market roads connecting rural areas to cities.

The location and identification of Section 4(f) and 6(f) resources reflect this historic transportation corridor and urban development pattern. Today, in the urban areas that developed around the railroads at the turn of the century, there is a high concentration of historical resources. In many California cities, the railroad station is one of the oldest historical resources in the city. In the suburban and rural areas where development followed highways, some open space and natural areas have been preserved as public parks. In addition to these passive park[2] areas, new public parks and playgrounds have been built as part of residential developments. All of these historical resources and public parks are considered potential Section 4(f) and 6(f) resources. Therefore, in urban areas, an alternative would be more likely to affect historical and archeological resources, while in suburban, wilderness, or remote areas (e.g., mountain crossings), an alternative would be more likely to affect public parks and recreation lands and wildlife and waterfowl refuges.

Section 4(f) and 6(f) Resources by Corridor

The most significant Section 4(f) and 6(f) resources in each region (except historical and archaeological resources) are identified below. (See Section 3.12, "Cultural Resources and Paleontological Resources," for information on historical and archeological resources.)

San Francisco to San Jose Corridor
This corridor extends from the areas on the west side of the San Francisco Bay along the Caltrain rail line from the City of San Francisco to the City of San Jose. This corridor contains a wide variety of Section 4(f) and 6(f) resources, including the San Bruno Mountain State and County Park and many local parks and playgrounds. The historic rail stations in Burlingame, Santa Clara, and San Jose typify many of the historical resources that can be found throughout the corridor.

Oakland to San Jose Corridor
This corridor extends from the areas on the east side of the San Francisco Bay along I-880 and an existing UPRR alignment from the City of Oakland to the City of San Jose. A number of 4(f) and 6(f) resources are contained within the corridor, including regional parks and many local parks. The historic downtown district in the City of Oakland typifies the historical resources that can be found throughout the corridor.

San Jose to Central Valley Corridor
The San Jose to Central Valley corridor includes the areas from the City of San Jose south to the City of Gilroy and east across the Diablo Range to the Central Valley. Section 4(f) resources within this corridor are found to the west along the Pacheco alignment alternative and include many local parks within the San Jose and Morgan Hill city limits and historical resources such as the historic rail station in the City of Gilroy. The resources include Henry Coe State Park, Great Valley Grasslands State Park, Upper Cottonwood Creek Wildlife Area, and the Los Banos Wildlife Area. There are no Section 6(f) resources within the study area of this corridor.

East Bay to Central Valley Corridor
This corridor includes the areas from the City of Fremont east through Niles Canyon and into the cities of Pleasanton, Dublin, and Livermore. East of the City of Livermore, the alignment alternatives in this corridor continue through the Altamont Pass and into the Central Valley via the cities of Tracy and Manteca. A number of 4(f) and 6(f) resources are contained within the corridor, including regional parks and trails (Pleasanton Ridge, Vargas Plateau, and Shadow Cliffs), public golf courses (Las Positas and Springtown), and a number of local parks.

[2] *Passive park* refers to a park that is used for picnicking or passive water sports; it also describes zoos and arboretums. An *active park* is a park that includes facilities such as children's play equipment, playing fields, tennis or basketball courts, etc.

San Francisco Bay Crossings
These crossing alternatives include the San Francisco Bay crossings between the cities of San Francisco and Oakland near the San Francisco/Oakland Bay Bridge and between the cities of East Palo Alto and Newark south of the Dumbarton Bridge and into the City of Fremont. Section 4(f) resources (there are no Section 6(f) resources within this alignment alternative) are contained within the corridor, including one prominent national park (Don Edwards San Francisco Bay National Wildlife Refuge), a regional park (Quarry Lakes Regional Park), and many local parks.

Central Valley Corridor
The Central Valley corridor includes the areas of the Central Valley from the City of Stockton south to the northern areas of Madera County. There are two alignment alternatives within the Central Valley corridor that traverse along the existing UPRR and BNSF rail lines. A number of 4(f) resources are contained within the corridor, including two regional parks (Tuolumne River Regional Park and Jacob Meyer Regional Park), the Stanislaus County Fairgrounds, and numerous local parks.

3.16.3 Environmental Consequences

A. NO PROJECT ALTERNATIVE

The existing conditions are based on transportation infrastructure that was identified as part of the alternatives definition process. The No Project Alternative is based on existing conditions and the funded and programmed transportation improvements that are projected to be developed and in operation by 2030. It is not possible as part of this study to identify or quantify the potential uses and impacts expected to occur by 2030 with implementation of the No Project Alternative. Rather, it is assumed that the improvements to be developed and implemented under the No Project Alternative would undergo typical design and construction practices that would avoid or greatly limit potential impacts. Additionally, each improvement associated with the No Project Alternative would be subject to a project-level environmental document that would identify potential uses and impacts, as well as measures to avoid, minimize, or mitigate the impacts. Although it is expected that there may be additional changes in conditions by 2030, it would speculative to attempt to estimate or quantify such changes. Thus, no additional impacts beyond the existing conditions are quantified under the No Project Alternative.

B. HIGH-SPEED TRAIN ALIGNMENT ALTERNATIVES

Table 3.16-2 summarizes the number of potential high impacts as identified in Section 3.16.1B on Section 4(f) and 6(f) resources by corridor.

Table 3.16-2
Number of Potential High Impacts on Section 4(f) and 6(f) Resources by Corridor

Corridor	Potential High Impacts on Section 4(f) Resources	Potential High Impacts on Section 6(f) Resources	Total Potential High Impacts
San Francisco to San Jose	6	0	6
Oakland to San Jose	10–11	2–4	12–15
San Jose to Central Valley	5–6	0	5–6
East Bay to Central Valley	4–6	1	5–7
San Francisco Bay Crossings	0–4	0	0–4
Central Valley	4–6	0	4–6
Source: Parsons 2007.			

C. COMPARISON OF ALTERNATIVES BY CORRIDOR

This section outlines the potential impacts of the HST on Section 4(f) and 6(f) resources by alignment alternative. Differences in potential impacts between HST alignment alternatives are also discussed. Appendix 3.16-A provides summary tables showing a more detailed comparison of the different alternatives and their potential impacts on Section 4(f) and 6(f) resources. Table 3.16-3 provides the number of resources by corridor and alignment alternative for each rating category (H, M, L). The number of historical resources within 900 ft (274 m) of the proposed alignment alternative and its sensitivity rating (H, M, L) is also listed in Table 3.16-3. Publically owned lands near the HST alignment are shown in Figure 3.16-1.

Table 3.16-3
Summary of Potential Impacts on Section 4(f) and 6(f) Resources

Corridor	Possible Alignments	Alignment Alternative	Section 4(f) Parks/ Recreational Resources (H,M,L)	Section 6(f) Water Conservation Fund Properties	Known Historical Resources Within 500 Feet of Centerline and Overall Ranking of Alignment Alternative (H,M,L)
San Francisco to San Jose: Caltrain	1 of 1	San Francisco to Dumbarton	4-H, 8-M, 5-L	0-H, 0-M, 2-L	51 – H
	1 of 1	Dumbarton to San Jose	6-H, 4-M, 3-L	0-H, 0-M, 1-L	34 – H
Station Location Options					
Transbay Transit Center			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – H
4th and King (Caltrain)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – H
Millbrae/SFO			0-H, 0-M, 0-L	0-H, 0-M, 0-L	1 – H
Redwood City (Caltrain)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Palo Alto (Caltrain)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	1 – M
Oakland to San Jose: Niles/I-880	1 of 2	West Oakland to Niles Junction	5-H, 9-M, 3-L	1-H, 1-M, 1-L	24 – M-L
		12th Street/City Center to Niles Junction	6-H, 8-M, 5-L	2-H, 0-M, 2-L	32 – H
	1 of 2	Niles Junction to San Jose via Trimble	5-H, 1-M, 2-L	2-H, 0-M, 0-L	31 – H
		Niles Junction to San Jose via I-880	5-H, 1-M, 1-L	1-H, 0-M, 0-L	4 – L
Station Location Options					
West Oakland/7th Street			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
12th Street/City Center			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – M
Coliseum/Airport			0-H, 1-M, 0-L	0-H, 0-M, 0-L	0 – L
Union City (BART)			0-H, 1-M, 0-L	0-H, 0-M, 0-L	0 – L

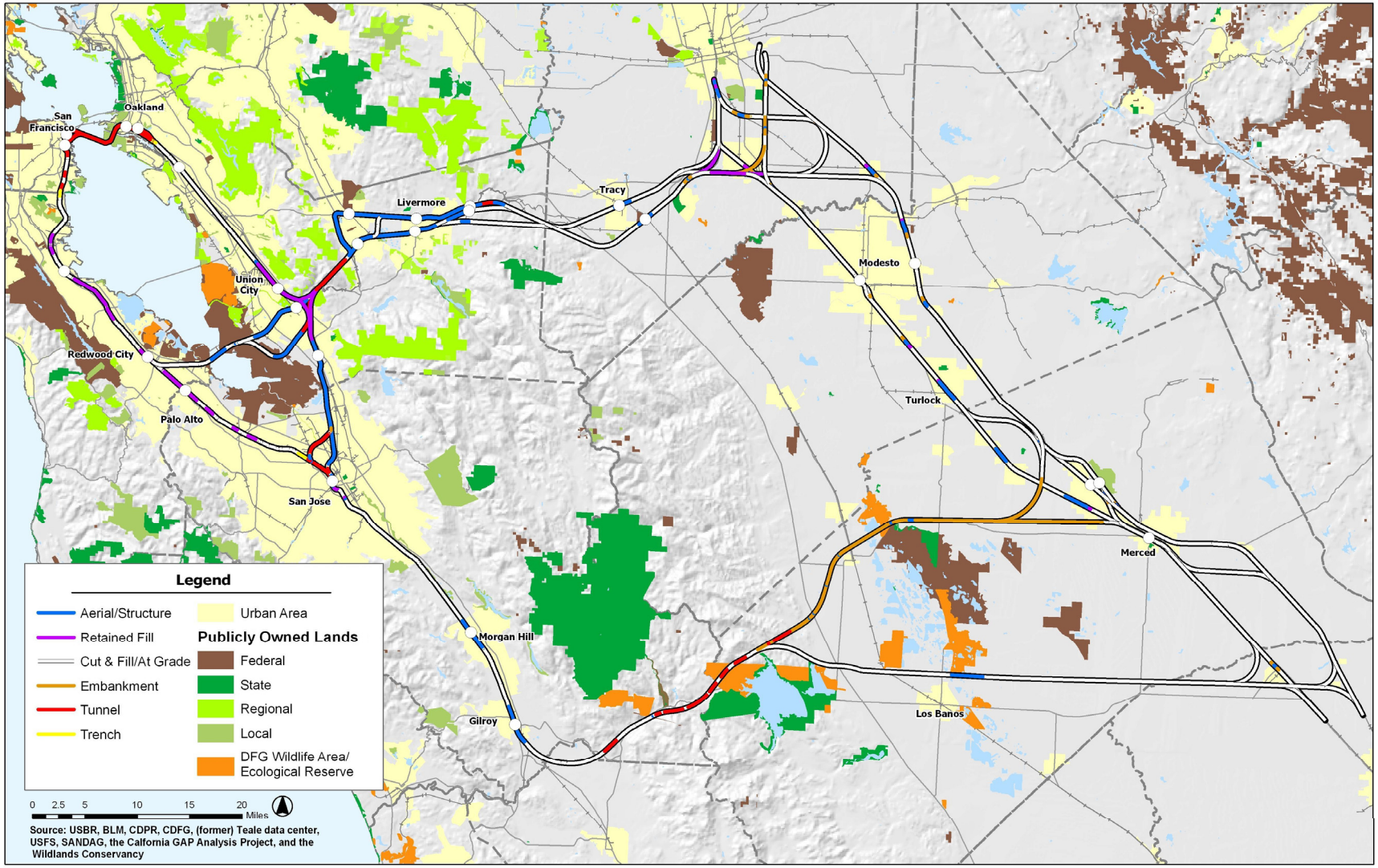

Figure 3.16-1
Publicly Owned Lands

Corridor	Possible Alignments	Alignment Alternative	Section 4(f) Parks/ Recreational Resources (H,M,L)	Section 6(f) Water Conservation Fund Properties	Known Historical Resources Within 500 Feet of Centerline and Overall Ranking of Alignment Alternative (H,M,L)
Fremont (Warm Springs)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
San Jose to Central Valley: Pacheco Pass	1 of 1	Pacheco	3-H, 1-M, 4-L	0-H, 0-M, 1-L	11 – M
	1 of 3	Henry Miller (UPRR Connection)	2-H, 0-M, 0-L	0-H, 0-M, 0-L	5 – M
		Henry Miller (BNSF Connection)	2-H, 0-M, 0-L	0-H, 0-M, 0-L	5 – M
		GEA North	3-H, 0-M, 0-L	0-H, 0-M, 0-L	9 – M
San Jose (Diridon)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	1 – M
Morgan Hill (Caltrain)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Gilroy (Caltrain)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
East Bay to Central Valley: Altamont Pass	1 of 4	I-680/ 580/UPRR	6-H, 3-M, 2-L	1-H, 0-M, 1-L	20 – M
		I-580/ UPRR	4-H, 4-M, 0-L	1-H, 0-M, 0-L	17 – M
		Patterson Pass/UPRR	4-H, 5-M, 1-L	1-H, 0-M, 0-L	6 – L
		UPRR	4-H, 5-M, 1-L	1-H, 0-M, 0-L	6 – L
	1 of 4	Tracy Downtown (BNSF Connection)	0-H, 2-M, 5-L	0-H, 0-M, 0-L	14 – L
		Tracy ACE Station (BNSF Connection)	0-H, 2-M, 0-L	0-H, 0-M, 0-L	15 – L
		Tracy ACE Station (UPRR Connection)	0-H, 2-M, 0-L	0-H, 0-M, 0-L	12 – L
		Tracy Downtown (UPRR Connection)	0-H, 2-M, 5-L	0-H, 0-M, 0-L	11 – L
	2 of 2	East Bay Connections	1-H, 2-M, 0-L	0-H, 0-M, 0-L	0 – L
Station Location Options					
Pleasanton (I-680/Bernal Rd)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Pleasanton (BART)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Livermore (Downtown)			0-H, 0-M, 4-L	0-H, 0-M, 0-L	0 – L
Livermore (I-580)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L

Corridor	Possible Alignments	Alignment Alternative	Section 4(f) Parks/ Recreational Resources (H,M,L)	Section 6(f) Water Conservation Fund Properties	Known Historical Resources Within 500 Feet of Centerline and Overall Ranking of Alignment Alternative (H,M,L)
Livermore (Greenville Road/UPRR)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Livermore (Greenville Road/I-580)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Tracy (Downtown)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Tracy (ACE)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
San Francisco Bay Crossings	1 of 2	Trans Bay Crossing – Transbay Transit Center	1-H, 0-M, 0-L	0-H, 0-M, 0-L	3 – L
		Trans Bay Crossing – 4th & King	0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
	1 of 6	Dumbarton (High Bridge)	4-H, 1-M, 3-L	0-H, 0-M, 0-L	0 – L
		Dumbarton (Low Bridge)	4-H, 1-M, 3-L	0-H, 0-M, 0-L	0 – L
		Dumbarton (Tube)	4-H, 1-M, 3-L	0-H, 0-M, 0-L	0 – L
		Fremont Central Park (High Bridge)	5-H, 1-M, 0-L	0-H, 0-M, 0-L	0 – L
		Fremont Central Park (Low Bridge)	5-H, 1-M, 0-L	0-H, 0-M, 0-L	0 – L
		Fremont Central Park (Tube)	5-H, 1-M, 0-L	0-H, 0-M, 0-L	0 – L
Station Location Options					
Union City (Shinn)			0-H, 1-M, 0-L	0-H, 0-M, 1-L	0 – L
Central Valley	1 of 6	BNSF – UPRR	3-H, 7-M, 2-L	0-H, 0-M, 0-L	28 – L
		BNSF	3-H, 7-M, 2-L	0-H, 0-M, 0-L	17 – L
		UPRR N/S	5-H, 5-M, 2-L	1-H, 0-M, 0-L	67 – M
		BNSF Castle	3-H, 7-M, 2-L	0-H, 0-M, 0-L	21 – L
		UPRR – BNSF Castle	5-H, 5-M, 2-L	1-H, 0-M, 0-L	24 – M
		UPRR – BNSF	5-H, 5-M, 2-L	1-H, 0-M, 0-L	31 – M
Station Location Options					
Modesto (Downtown)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – M
Briggsmore (Amtrak)			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L
Merced (Downtown)			0-H, 0-M, 1-L	0-H, 0-M, 0-L	0 – M
Castle AFB			0-H, 0-M, 0-L	0-H, 0-M, 0-L	0 – L

D. SAN FRANCISCO TO SAN JOSE CORRIDOR

Parkland and Wildlife Refuges

San Francisco to Dumbarton Alignment Alternative
This alignment alternative contains a variety of Section 4(f) and 6(f) resources, including approximately 17 local parks within 900 ft (274 m) that could be affected. This alignment alternative could directly impact up to five Section 4(f) and 6(f) resources within 150 ft (46 m).

Dumbarton to San Jose Alignment Alternative
Within the Dumbarton to San Jose alignment alternative, there are a variety of Section 4(f) and 6(f) resources, including approximately 13 regional and local parks within 900 ft (274 m) of the HST alignment. Approximately three 4(f) resources adjacent to the corridor could be directly affected by the Dumbarton to San Jose alignment alternative.

This alignment alternative would be in the existing railroad corridor as it passes most of these resources between the cities of San Francisco and San Jose, and it is not likely to have a significant impact on 4(f) or 6(f) resources.

Cultural Resources

San Francisco to Dumbarton Alignment Alternative
This alignment alternative has a high density of cultural resources within the city of San Francisco. In total, there are 16 archaeological resources and 35 recorded architectural resources. The area has been developed since the 1850s and therefore is rich in historical architecture as well as archaeological sites. The majority of prehistoric sites are shell middens, and many of the historical sites are deposits from various activities dating from the late 1800s as well as the earthquake in 1906. The alignment alternative in San Francisco goes through numerous historic districts, including the 2nd Street District, the Aronson District, and the Rincon Point/South Beach District. This portion of the alignment alternative includes the 1925 Army-Navy YMCA building, the 1950 Sailors Union of the Pacific building, the 1910 Commercial Block Building, the 1937 Metropolitan Electric building, the World War II era 3rd Street Retail Office Building, the China Basin Warehouse (ca. 1892), the Coal Gasification Facility (ca. 1900), and the Burlingame Commercial Building (ca. 1920s). This portion also contains the 1939 Transbay Terminal. The historic Transbay Terminal will be replaced with a new structure as part of the new Transbay Transit Center sometime between 2008 and 2014. This alignment alternative has a high sensitivity for prehistoric, historical, and architectural resources. No traditional cultural properties were identified within the APE.

Dumbarton to San Jose Alignment Alternative
This alignment alternative has a low density of previously recorded cultural resources until it reaches San Jose, where it has a high density of cultural resources. A total of 10 archaeological resources and 24 architectural resources are located within the APE. These include a 1927 commercial building, the 1941 Silver Springs Underpass, the 1898 Sunol Aqueduct, the 1861 Sanborn/Bunting House, segments of the San Francisco and San Jose Railroad (ca.1860s), and recorded residential properties from the 1890s to the 1940s. The alignment alternative also contains additional historic structures including the city of Mountain View adobe (ca. 1933), the FMC complex in San Jose (ca. 1948), the Union Pacific Rail yard Complex (ca. 1925), and recorded residential buildings dated from the 1880s to the 1940s. One archaeological site in San Jose, the Santa Clara de Asis Mission, includes both prehistoric and historic resources. The Mission was built by the Spanish in the late eighteenth century in order to convert local Native Americans to Christianity. Many of the neophyte converts lived in villages on the perimeter of the mission complex resulting in a mix of historical and prehistoric archaeological deposits, including burials. The portion of the Dumbarton to San Jose alignment alternative that traverses San Jose has a high sensitivity for prehistoric, historical, and architectural resources. No traditional cultural properties were identified within the APE.

San Francisco to San Jose Corridor Station Location Options
Two of the station location options have recorded cultural resources that are within the APE. Millbrae Train Station was built in 1907 after a fire that destroyed the original station built in 1864. It is now a railroad museum located approximately 200 ft from the modern train station. The Palo Alto train station was built in 1941 and included on the NRHP in 1996. The station location options within San Francisco do not have recorded cultural resources within the APE but have a large number of unrecorded architectural resources adjacent to them, including the 1939 Transbay Terminal, as discussed above.

E. OAKLAND TO SAN JOSE CORRIDOR

Parkland and Wildlife Refuges

West Oakland to Niles Junction Alignment Alternative
Within the West Oakland to Niles Junction alignment alternative, there are a variety of Section 4(f) and 6(f) resources, including approximately 17 regional and local parks within 900 ft (274 m) of HST alignments. Approximately five 4(f) and 6(f) resources adjacent to the corridor could be directly affected by this alignment alternative. Nine 4(f) and 6(f) resources could also be indirectly affected by the West Oakland to Niles Junction Alignment Alternative because they are between 150 ft (46 m) and 450 ft (137 m) from the proposed alignment.

12th Street/City Center to Niles Junction Alignment Alternative
Approximately 19 local and regional parks are within 900 ft (274 m) of the 12th Street/City Center to Niles Junction alignment alternative. Six of the 4(f) and 6(f) resources are adjacent to the corridor and could be directly affected by the HST Alignment Alternative. Eight 4(f) and 6(f) resources could also be indirectly affected by the alignment alternative because they are between 150 ft (46 m) and 450 ft (137 m) from the proposed alignment.

Niles Junction to San Jose via Trimble Alignment Alternative.
Within the Niles Junction to San Jose via Trimble alignment alternative, there are a variety of Section 4(f) and 6(f) resources, including approximately eight regional and local parks within 900 ft (274 m) of HST alignments. Two facilities, Fremont Central Park and Grimmer Park, are adjacent to the alignment alternative and could be directly affected by the project. One 4(f) and 6(f) resource, Pinewood Park, could also be indirectly affected by the Niles Junction to San Jose via Trimble alignment alternative because it is between 150 ft (46 m) and 450 ft (137 m) from the proposed alignment.

Niles Junction to San Jose via I-880 Alignment Alternative
There are a variety of Section 4(f) and 6(f) resources within the Niles Junction to San Jose via I-880 alignment alternative, including approximately seven regional and local parks within 900 ft (274 m) of the alignment alternative. There are five adjacent facilities that could be directly affected by the Niles Junction to San Jose via I-880 alignment alternative. One 4(f) and 6(f) resource, Pinewood Park, could also be indirectly affected by this alignment alternative because it is between 150 ft (46 m) and 450 ft (137 m) from the proposed alignment.

Because the majority of these alignment alternatives would be within existing transportation right-of-way, impacts to parks and wildlife resources are not anticipated.

Cultural Resources

West Oakland to Niles Junction Alignment Alternative
In total, there are six recorded archaeological sites and 18 recorded architectural resources within the APE of this alignment alternative. The majority of resources are located within the city of Oakland. These include the 1924 Clorox Chemical Building, the 1926 PG&E Gas Compressor House, industrial complexes dating from the 1920s and 1940s, and 12 recorded residential properties dating from the

1880s to the 1940s. Prehistoric sites in this area tend to be shell middens and occupation sites. Historical sites as well as architectural resources are typically associated with the late 1800s to early 1900s. The alignment alternative also traverses the Old Oakland Historic District. Portions of the alignment alternative outside Oakland have a medium to low sensitivity. This alignment alternative has a high density of cultural resources and has a high sensitivity for prehistoric, historic, and architectural resources. No traditional cultural properties were identified within the APE.

12th Street/City Center to Niles Junction Alignment Alternative
This alignment alternative has the highest density of cultural resources within this corridor. In total, there are 11 recorded archaeological sites and 21 recorded architectural resources within the APE. As in the West Oakland to Niles Junction alignment alternative, the majority of resources are located within the city of Oakland. These include the White Brothers' Hardwood Store (ca. 1927), the Weld-Rite Company Building (ca. 1925), the Art Moderne Sales office building (ca. 1938), and 18 recorded residential properties dating from the 1880s to the 1920s. This alignment alternative has a high sensitivity for prehistoric, historical, and architectural resources. No traditional cultural properties were identified within the APE.

Niles Junction to San Jose via Trimble Alignment Alternative
This alignment alternative has the second highest density of cultural resources within this corridor. In total, there are three recorded archaeological sites and eight recorded architectural resources within the APE. As in the Dumbarton to San Jose alignment alternative, the majority of resources are located within the San Jose, which includes the Santa Clara de Asis Mission. This portion of the project includes the Kraft Foods plant (ca.1950), the Moderne Factory building (ca. 1940), and 18 recorded residential properties. The portion of this alignment alternative that traverses San Jose is sensitive for prehistoric, historical, and architectural resources.

Niles Junction to San Jose via I-880 Alignment Alternative
This alignment alternative has two archaeological resources and two recorded architectural resources dating from 1928 and 1945. It has a medium sensitivity for archaeological and architectural resources.

Oakland to San Jose Corridor Station Location Options
None of the station location options have recorded cultural resources that are within the APE or directly adjacent to the APE, though the station location options within Oakland have a large number of unrecorded architectural resources adjacent to them.

F. SAN JOSE TO CENTRAL VALLEY CORRIDOR

Parkland and Wildlife Refuges

Pacheco Alignment Alternative
This alignment alternative, which runs between the cities of San Jose and Gilroy, is within 900 ft (274 m) of approximately seven Section 4(f) and 6(f) resources. Three of the resources (Edenvale Garden and Coyote Creek parks north of Gilroy and the Upper Cottonwood Wildlife Area west of Interstate 5) could be directly affected by the HST because they are within 150 ft (46 m). There would be no impacts to nearby Henry Coe State Park because it is not within 900 ft (274 m) of the alignment alternative, with State Route 152 acting as a barrier between the HST alignment and the park.

Henry Miller (UPRR) and Henry Miller (BNSF) Alignment Alternatives
East of the San Luis Reservoir, there are two Section 4(f) resources (San Luis Wildlife Refuge and Los Banos Wildlife Area) along the Henry Miller alignment alternative that begins just north of the San Luis Reservoir and traverses east to the City of Merced. The proposed alignment alternative would pass north of the O'Neil Forebay Wildlife Area and continue north and parallel of Henry Miller Road, north of the City of Los Banos. There would be no impacts to Pacheco State Park, the San Luis

Reservoir Wildlife Area, O'Neil Forebay Wildlife Area, the San Luis State Recreation Area, or the Lower Cottonwood Wildlife Area surrounding the San Luis Reservoir. The Volta Wildlife Area near Los Banos would also not be impacted because the alignment alternative would be beyond 900 ft (274 m) of the wildlife area's southern boundary.

GEA North Alignment Alternative
East of the San Luis Reservoir, there are three Section 4(f) resources (San Luis Wildlife Refuge, North Grasslands Wildlife Area, and Great Valley Grasslands State Park) along the GEA North alignment alternative that begins just north of the San Luis Reservoir and traverses east to the City of Merced north of Los Banos. The proposed alignment alternative would pass through and directly affect the San Luis National Wildlife Refuge, north of the City of Los Banos. The alignment alternative would come within 150 ft (46 m), but not encroach into, the boundaries of the North Grasslands Wildlife Area and the Great Valley Grasslands State Park; therefore, these resources could only be indirectly affected by this alternative.

Cultural Resources

Pacheco Alignment Alternative
This alignment alternative roughly follows SR 152 through the Pacheco Pass. Little development has taken place in this area. In total, four recorded architectural resources were found to be located within the project APE. Of these, two are historic canals and one is a bridge. There are also likely historic resources in the Santa Clara Valley, including Morgan Hill and Gilroy. A total of seven previously recorded archaeological resources are located within the APE. Three of them are small prehistoric sites that typically include midden and lithic debitage. Though little archaeological work has been conducted in this area, it is known to be highly sensitive for prehistoric archaeological resources. Overall, this alignment has medium sensitivity for cultural resources.

Henry Miller (UPRR Connection) Alignment Alternative
The majority of this alignment alternative is in Merced County in the Central Valley. Much of the area has seen little development historically. Previously recorded resources present include one archaeological site and four architectural resources. Overall, this alignment alternative has a medium sensitivity for cultural resources.

Henry Miller (BNSF Connection) Alignment Alternative
This alignment alternative would have the same known resources as identified for the Henry Miller (UPRR Connection) alignment alternative.

GEA North Alignment Alternative
This alignment alternative is in Merced County in the Central Valley. Much of the area has seen little development historically. Previously recorded resources present include four archaeological sites and five architectural resources. All four of the archaeological resources are prehistoric sites including a habitation site and human burials just west of the city of Merced. Overall, this alignment alternative has medium sensitivity for cultural resources.

San Jose to Central Valley Corridor Station Location Options
Only the San Jose Diridon station location option within this corridor has a recorded architectural resource that is within the APE or directly adjacent to the APE.

G. EAST BAY TO CENTRAL VALLEY CORRIDOR

Parkland and Wildlife Refuges

I-680/580/UPRR Alignment Alternative
The I-680/580/UPRR alignment alternative is within 900 ft (274 m) of approximately 12 Section 4(f) and 6(f) resources. Seven of the resources, including the Augustin-Bernal and Muirwood parks in

Pleasanton, the Dublin Sports Grounds Complex, Vargas Plateau, and three trails operated by the EBRPD are within 150 ft (46 m) of the proposed alignment alternative and could be directly affected by the HST. Three additional parks are within 450 ft (137 m) of the alignment alternative; Meadowlark and Val Vista parks in Pleasanton and the Las Positas Golf Course in Livermore and could be indirectly affected.

I-580/UPRR Alignment Alternative

There are 10 Section 4(f) and 6(f) resources within 900 ft (274 m) of the I-580/UPRR alignment alternative. One park, the Augustin-Bernal Park in Pleasanton, the Vargas Plateau and three trails operated by the EBRPD could be directly affected by this alignment alternative. Three additional Section 4(f) and 6(f) resources—the Fairways Golf Course in Pleasanton, the Shadow Cliffs Regional Recreation Area, and Las Positas Golf Course in Livermore—are within 450 ft (137 m) of the alignment alternative and could be indirectly affected.

Patterson Pass/UPRR

The Patterson Pass/UPRR alignment alternative is within 900 ft (274 m) of approximately 12 Section 4(f) and 6(f) resources. The Augustin-Bernal Park, Vargas Plateau, and three trails operated by the EBRPD are Section 4(f) or 6(f) resources within 150 ft (46 m) of the proposed alignment alternative and could be directly affected by the project. The alignment alternative could have an indirect impact on an additional five 4(f) or 6(f) resources (Fairways Golf Course, Shadow Cliffs Regional Recreation Area, Oak Knoll Pioneer Memorial Park, Doolan Park, and Madiera Park) that are within 450 ft (137 m).

UPRR

Within 900 ft (274 m) of the UPRR alignment alternative, there are approximately 12 Section 4(f) and 6(f) resources that could be affected. The Augustin-Bernal Park, Vargas Plateau, and three trails operated by the EBRPD are Section 4(f) or 6(f) resources within 150 ft (46 m) of the proposed alignment alternative and could be directly affected by the project. Indirect impacts to five Section 4(f) and 6(f) resources within 450 ft (137 m) could occur at the Fairways Golf Course and Shadow Cliffs Regional Recreational Area in Pleasanton and Oak Knoll Pioneer Memorial, Doolan, and Madiera Parks in Livermore.

Tracy Downtown (BNSF and UPRR Connections)

The Tracy Downtown alignment alternatives are within 900 ft (274 m) of approximately seven Section 4(f) resources and no Section 6(f) resources. There are no Section 4(f) resources that would be directly affected by these alignment alternatives. Two parks, Quail Ridge Park and Cotta Park, are within 450 ft (137 m) of the alignment alternatives and could have the potential for indirect impacts.

Tracy ACE Station (BNSF and UPRR Connections)

Both Tracy ACE Station alignment alternatives are within 900 ft (274 m) of two Section 4(f) resources and no Section 6(f) resources within the study area. There are no Section 4(f) resources that would be directly affected by these alignment alternatives. Two parks are within 450 ft (137 m) of the alignment alternatives and could have the potential to be indirectly affected by the proposed project.

Cultural Resources

I-680/580/UPRR Alignment Alternative

This alignment alternative spans from the eastern Bay Area to the Livermore Valley and has the highest density of cultural resources within this corridor. Much of the area has seen recent development. Along this alignment alternative there are eight previously recorded archaeological sites. There are 12 recorded architectural resources including the Western Pacific Railroad Buildings (ca. 1909), the Kennedy Ranch (ca. 1890), and 10 residential (mainly craftsman) properties dating from 1910 to 1940. The archaeological resources are prehistoric sites. Overall, this alignment alternative has medium sensitivity for cultural resources.

I-580/UPRR Alignment Alternative
The Livermore Valley has seen little archaeological work until recently, though it is known to be rich in prehistoric resources, including large habitation sites and burials. Several unrecorded burials are located immediately adjacent to the APE of this alignment alternative just west of the City of Livermore. Previously recorded resources present include six archaeological sites and 11 architectural resources. Recorded resources include a 1947 industrial warehouse, the Quonset Warehouse (ca. 1950s), the West Altamont Underpass (ca. 1909), and 8 recorded residential properties dating between 1890 and the 1930s. The archaeological resources are prehistoric sites. Overall, this alignment alternative has medium sensitivity for cultural resources.

Patterson Pass/UPRR Alignment Alternative
This alignment alternative includes three previously recorded archaeological resources and three architectural resources. Overall, this alignment alternative has low sensitivity for cultural resources.

UPRR Alignment Alternative
This alignment alternative includes five previously recorded archaeological resources and one architectural resource. Overall, this alignment alternative has low sensitivity for cultural resources.

Tracy Downtown (BNSF Connection) Alignment Alternative
This alignment alternative includes eight previously recorded archaeological resources and 10 architectural resources. Some of the archaeological sites are prehistoric and include midden sites with few to no artifacts or related materials. Overall, this alignment alternative has low sensitivity for cultural resources. The majority of the architectural resources are located south of Tracy.

Tracy ACE Station (BNSF Connection) Alignment Alternative
This alignment alternative includes two previously recorded archaeological resources and 13 architectural resources. Recorded resources include eight World War II era warehouses, a 1952 U.S. Army Depot Flag Pole, and four U.S. Army Depot buildings from the 1950s. Some of the archaeological sites are prehistoric and include midden sites with few to no artifacts or related materials. The majority of the architectural resources are located south of Lathrop. Overall, this alignment alternative has low sensitivity for cultural resources.

Tracy ACE Station (UPRR Connection) Alignment Alternative
This alignment segment includes two previously recorded archaeological resources and 10 architectural resources. Similar to the other Tracy alignment alternatives, the archaeological resources include midden sites and the majority of the architectural resources are located south of Lathrop. Overall, this alignment alternative has low sensitivity for cultural resources.

Tracy Downtown (UPRR Connection) Alignment Alternative
This alignment alternative includes eight previously recorded archaeological resources and seven recorded architectural resources. These include an undated wooden Western Pacific Railroad trestle, two industrial warehouses from the 1950s, residential properties from the 1940s, and an undated farmstead property. Similar to the Tracy Downtown (BNSF Connection) alignment alternative, the archaeological resources include midden sites and the majority of the architectural resources are located south of Tracy. Overall, this alignment alternative has low sensitivity for cultural resources.

The west end of this alignment alternative extends through approximately 2 mi of Miocene sedimentary deposits similar to the Tracy Downtown (BNSF Connection) alignment alternative. Overall, this alignment alternative was identified to have a medium sensitivity for paleontological resources.

East Bay Connections Alignment Alternative
The East Bay Connections alignment alternative is not known to have cultural resources that are within the APE or directly adjacent to the APE.

East Bay to Central Valley Corridor Station Location Options
Based on the archival records search, none of the station location options have cultural resources that are within the APE or directly adjacent to the APE. The station location options were found to have a low sensitivity for cultural resources.

H. SAN FRANCISCO BAY CROSSINGS

Parkland and Wildlife Refuges

Transbay
There is one Section 4(f) resource and no Section 6(f) resources near both Transbay alignment alternatives. South Park in San Francisco is approximately 150 ft (46 m) from the Transbay Transit Center alignment alternative, but because the proposed alignment would be in a tunnel, there is no anticipated impact on the park. The same park is over 1,000 ft (305 m) from the 4th and King alignment alternative, and therefore, there is a limited potential for indirect effect to the park.

Dumbarton
There are approximately eight Section 4(f) resources and no 6(f) resources near the Dumbarton alignment alternatives. Three Section 4(f) resources—the Don Edwards San Francisco Bay National Wildlife Refuge, Kelly Park in Menlo Park, and the Newark Civic Center Park—would be adjacent to the proposed alignment alternatives and could be directly affected by the proposed project. The 28,000-acre Don Edwards San Francisco Bay National Wildlife Refuge, which is located in the region on the southeast side of the San Francisco Bay, is the largest urban wildlife refuge in the nation. It is home to millions of shorebirds and waterfowl, with a total of 250 bird species, including the endangered California clapper rail (*Rallus longirostris obsoletus)*. Another special-status species in the refuge is the salt marsh harvest mouse (*Reithrodontomys raviventris)*. The Ash Street Park in Newark is further away from the proposed alignment alternatives and could potentially be indirectly impacted.

Fremont Central Park
There are six Section 4(f) resources near the Fremont Central Park alignment alternatives. Five resources (Don Edwards San Francisco Bay National Wildlife Refuge, Blacow Park, Fremont Central Park, Gomes Park, and Vallejo Mill Park) are adjacent to the proposed alignment alternatives and have a high potential to be directly affected by the project. The 28,000-acre Don Edwards San Francisco Bay National Wildlife Refuge, which is located in the region on the southeast side of the San Francisco Bay, is the largest urban wildlife refuge in the nation. It is home to millions of shorebirds and waterfowl, with a total of 250 bird species, including the endangered California clapper rail (*Rallus longirostris obsoletus)*. Another special-status species in the refuge is the salt marsh harvest mouse (*Reithrodontomys raviventris)*. Marshall Park in Fremont is within 450 ft (137 m) of the proposed alignment alternatives and has the potential to be indirectly affected by the project.

Cultural Resources

Trans Bay Crossing – Transbay Transit Center Alignment Alternative
Most of this alignment alternative is below the San Francisco Bay and therefore has very low sensitivity for archaeological resources, though the terrestrial portions are highly sensitive for both historical archaeological deposits and architectural resources. One resource, the Transbay Terminal, was built in 1939 as a California Toll Bridge Authority facility in order to facilitate commuter rail travel across the lower portion of the San Francisco-Oakland Bay Bridge. The historic Transbay Terminal will be replaced with a new structure as part of the new Transbay Transit Center sometime between 2008 and 2014. Another resource within the APE is the Historic Ferry Building. Originally constructed in 1903, it was the second busiest transportation terminal in the world during the 1930s. Past subsurface archaeological testing has revealed that much of the area is fill rich with historic artifacts

from the Gold Rush period through the 1906 earthquake and resulting fire. This alignment also traverses the Embarcadero Piers Historic District.

Trans Bay Crossing – 4th and King Alignment Alternative
Like the Trans Bay Crossing – Transbay Transit Center alignment alternative, this alignment alternative is below the San Francisco Bay and therefore has very low sensitivity for archaeological resources, though the terrestrial portions are highly sensitive for both historical archaeological deposits and architectural resources. Past subsurface archaeological testing has revealed that much of the area is fill rich with historic artifacts from the Gold Rush period through the 1906 earthquake and resulting fire.

Dumbarton Alignment Alternatives (High Bridge, Low Bridge, Tube)
Four recorded archaeological resources were identified along these alignment alternatives. The prehistoric sites include a habitation site associated with burials while others are historic sites resulting from early 1900s industrial activities. No recorded architectural resources were identified in the records search for these alignment alternatives.

Freemont Central Park Alignment Alternatives (High Bridge, Low Bridge, Tube)
No recorded archaeological or architectural resources were identified in the records search for these alignment alternatives.

I. CENTRAL VALLEY CORRIDOR

Parkland and Wildlife Refuges

UPRR
There are approximately 12 Section 4(f) and 6(f) resources within 900 ft (274 m) of the UPRR alignment. The alignment has the potential to directly affect four Section 4(f) and one Section 6(f) resources, including the Tuolumne Regional Park, County Park in Salida, the Stanislaus County Fairgrounds, and Broadway and Central Parks in Turlock. Five additional resources have the potential to be indirectly affected by the alignment alternative.

BNSF
Along the BNSF alignment, approximately 12 Section 4(f) and 6(f) resources are within 900 ft (274 m). Main Street Park in Escalon, Zerillo Park in Riverbank, and the Jacob Meyer Regional Park in an unincorporated portion of San Joaquin County are within 150 ft (46 m) of this alignment and could be potentially impacted directly. There are seven other resources that are within 450 ft (137 m) of the alignment and could have the potential to be indirectly affected by the project.

Cultural Resources

BNSF/UPRR Alignment Alternative
This alignment alternative, and all alignment alternatives within this corridor, trends north-south through the Central Valley beginning south of Stockton to just south of Chowchilla. This alignment alternative generally follows existing railroad lines. In total, there is one previously recorded archaeological resource and 27 architectural resources. These include a 1947 railroad trestle, a 1950 flatcar railroad bridge, Robertson Boulevard (ca. 1913), Redrock Winery (ca. 1920), Le Grand Canal (ca. 1910), and 22 recorded residential properties dating between 1920 and the 1940s. Most of the architectural resources are within the cities of Escalon and Chowchilla. While some of the architectural resources are single-family residences built in the early 1900s, others are features associated with the railroad. Overall, this alignment alternative has low sensitivity for cultural resources.

BNSF Alignment Alternative
Similar to the BNSF-UPRR alignment alternative, this alignment alternative generally follows existing railroad lines. In total there is one previously recorded archaeological resource and 16 recorded architectural resources. These include the 1912 Escalon Water and Auxiliary Water Systems; the 1935 Escalon Sanitary Sewer System; portions of the 1895 Atchison, Topeka, and Santa Fe Railroad; Bud's Frosties (ca. 1946); Farmer Bill's Produce (ca. 1940); and 11 recorded residential properties dating between 1910 and the 1940s. Most of the architectural resources are within or around the City of Escalon. Overall, this alignment alternative has low sensitivity for cultural resources.

UPRR N/S Alignment Alternative
Similar to the BNSF-UPRR alignment alternative, this alignment alternative generally follows existing railroad lines. In total, there are four previously recorded archaeological resources and 63 architectural resources. Some of the archaeological resources are prehistoric sites, including a habitation site associated with burials, while others are historic sites resulting from early 1900s industrial activities. Most of the architectural resources are around the communities of Delhi, Livingston, Atwater, and Chowchilla. There are a series of historic canals recorded in this portion of the alignment alternative including the Ashe Lateral (ca. 1890s), the Fairfield Canal (ca. 1910), the 1920 Arena Canal, and seven other unnamed canals dating to ca. 1900. There are also four freeway bridges dating from the 1940s. This portion includes la Fuentes Market (ca.1940) and A.V. Produce (ca. 1925), as well as 43 recorded residential properties dating from the 1890s to the 1950s. Overall, this alignment alternative has medium sensitivity for cultural resources.

BNSF Castle Alignment Alternative
Similar to the BNSF-UPRR alignment alternative, this alignment alternative generally follows existing railroad lines. In total, there is one previously recorded archaeological resource and 20 architectural resources. Most of the architectural resources are within the cities of Escalon and Chowchilla, such as the Escalon Motel (ca. 1940s), a 1926 Texaco Station, and Wright's Petroleum (ca. 1918). Some of the architectural resources are single-family residences (11 recorded) built in the early 1900s. There are also several features associated with the railroad such as a 1909 wooden railroad trestle and portions of the Tidewater Southern Railroad dating from 1912. Overall, this alignment alternative has low sensitivity for cultural resources.

UPRR-BNSF Castle Alignment Alternative
Similar to the BNSF-UPRR alignment alternative, this alignment alternative generally follows existing railroad lines. In total, there are four previously recorded archaeological resources and 20 architectural resources. The recorded architectural resources include the Riverbank Library (ca. 1899), irrigation canals (ca. 1900), a 1904 railroad bridge, a 1910 farmstead, and numerous (13 recorded) residential properties dating between 1900 and 1950. This portion also contains segments of the 1895 Atchison, Topeka, and Santa Fe Railroads. Some of the archaeological resources are prehistoric sites, including a habitation site associated with burials, while others are historic sites resulting from early 1900s industrial activities. Most of the architectural resources are around the cities of Modesto and Merced. Overall, this alignment alternative has medium sensitivity for cultural resources.

UPRR-BNSF Alignment Alternative
Similar to the BNSF-UPRR alignment alternative, this alignment alternative generally follows existing railroad lines. There are four previously recorded archaeological resources within this alignment alternative. There are 27 recorded architectural resources, including three ca. 1940 highway bridges, abandoned segments of State Route 99 that are potentially historic, 1940s farms and associated structures, and numerous (19 recorded) residential properties dating between ca. 1900 and 1950. Some of the archaeological resources are prehistoric sites, including a habitation site associated with burials, while others are historic sites resulting from early 1900s industrial activities. Most of the architectural resources are around Chowchilla. Overall, this alignment alternative has medium sensitivity for cultural resources.

Central Valley Corridor Station Location Options
Based on the archival records search, none of the station location options have known cultural resources that are within the APE or directly adjacent to the APE. Only the Modesto (Downtown) and Merced (Downtown) station location options were found to have a medium sensitivity for cultural resources.

3.16.4 Impact Avoidance Strategies, Including Alternatives Screened from Further Consideration

Throughout the environmental review process, and particularly in the identification of potential HST alignment alternatives and station location options, the Authority has emphasized avoidance of and minimizing harm to the environment. One of the Authority's policies, as stated in Chapter 1, is "to maximize the use of existing transportation corridors and right-of-way to the extent feasible." This policy is one of the primary impact avoidance strategies for the proposed HST system and was applied during preparation of the statewide HST Program EIR/EIS. This policy was carried forward and used in the scoping process and successive screening stages of this program environmental process (see Chapter 2, "Alternatives"). The screening evaluation considered the potential impacts of the various alignments and all the environmental parameters, including impacts on Section 4(f) and 6(f) resources. Based on the overall screening evaluation, in the Bay Area, different alignment alternatives were developed that avoid 4(f) and 6(f) resources, including Henry W. Coe State Park, to a great extent. At the end of this process, prudent and feasible general alignment alternatives were identified for each corridor of the entire Bay Area to Central Valley study region.

3.16.5 Avoidance Alternatives or Reasons for No Prudent or Feasible Alternative for Use of Section 4(f) or 6(f) Resource

Design studies and project-level environmental review for a proposed HST system would evaluate specific alignment alternatives selected for further study, identify potential uses of Section 4(f) and 6(f) resources, and seek additional opportunities to avoid or substantially reduce potential adverse impacts of these alternatives on Section 4(f) and 6(f) resources.

Potential direct impacts on many Section 4(f) and 6(f) resources could be avoided by remaining within existing railroad right-of-way, or moving horizontally within the right-of-way, where feasible. Avoidance of Section 4(f) and 6(f) resources would be further explored during project-level design and environmental evaluation. Project-level evaluations of Section 4(f) and 6(f) resource use would include evaluating the avoidance alternatives and making determinations regarding prudent or feasible alternatives for uses of Section 4(f) and 6(f) resources.

There are several potential Section 4(f) and 6(f) recreation resources and cultural resources within or immediately adjacent to the HST Alignment Alternatives. Avoidance of these resources would be possible in many cases by redesigning or narrowing the disturbance limits, in combination with noise walls and/or visual screening. However, there may be locations where avoidance could not be achieved, possibly for one of more of the following reasons.

- The HST Alignment Alternatives cannot be shifted easily because of the large turning radii required for HST operations and other design considerations. A minor shift in one location on the HST alignment could result in a substantial shift elsewhere on the alignment, potentially resulting in impacts on other Section 4(f) and 6(f) resources.
- Measures to reduce potential proximity impacts, such as noise walls, could result in potential adverse visual impacts on Section 4(f) and 6(f) resources. During project-level review, potential measures to minimize harm at each potentially affected resource would need to be analyzed in consultation with the owners of the resources to ensure that measures to minimize harm would not adversely affect the values of the Section 4(f) and 6(f) resources.

3.16.6 Mitigation Strategies and CEQA Significance Conclusions

The HST system could result in direct impacts to lands containing publicly owned parks and recreational resources by placing HST facilities on them. It could result in indirect impacts to these resources due to construction activities or HST system operations that adversely affect the use of publicly owned parks and recreational resources. The use of existing transportation corridors for HST facilities and the design direction that HST stations should serve as multi-modal transportation hubs has minimized the potential for the HST system impacts and constructive use of parks and recreational resources. In addition to addressing noise, biology, and air quality impacts in other sections, the section identifies the park, open space, wildlife preserves, and recreational resources located within the following categories: 0 to 150 ft (0 to 46 m), 150 to 450 ft (46 to 137 m), and 450 to 900 ft (137 to 274 m) from the centerline of HST alignment alternatives or station location options. Section 4(f) and 6(f) resources within the 0 to 150-foot distance are deemed as a direct and potentially significant impact under CEQA and as a potential constructive use of cultural resources under Section 4(f). This analysis identified a total of 40 4(f) and 6(f) resources within 150 ft of the centerlines for all of the alignment alternatives. The total number actually affected would be less than 40, depending on the Network Alternative selected (See Chapter 7). Resources in the 150 to 450-foot distance could also be significantly affected. Additionally, certain local, regional, or federal recreational resources could be affected. At the program level, it is not possible to know precisely the location, extent, and particular characteristics of impacts to park resources. Due to this uncertainty, as it was for the purposes of system-wide review at the programmatic level, this impact is considered significant for this programmatic review of the Bay Area to Central Valley study region.

The following mitigation strategies can be refined and applied at the project-specific level and would reduce this impact:

1. Continue to apply design practices to avoid impacts to park resources, and when avoidance cannot be accommodated, minimize the scale of the impact.
2. Apply measures at the project level to reduce and minimize indirect/proximity impacts as appropriate for the particular sites affected, while avoiding other adverse impacts (e.g., visual), such as noise barriers, visual buffers, and landscaping.
3. Apply measures to modify access to/egress from the recreational resource to reduce impacts to these resources.
4. Design and construct cuts, fill, and aerial structures to avoid and minimize visual impacts to units of the state park system.
5. Incorporate wildlife under or over crossings at appropriate intervals as necessary.
6. Where public parklands acquired with public funds would be acquired for nonpark use as part of the HST system, commit as required by law to providing funds for the acquisition of substantially equivalent substitute parkland or to acquiring/providing substitute parkland of comparable characteristics.
7. Restore affected parklands to natural state and replace or restore affected park facilities.
8. If park facilities must be relocated, provide planning studies as well as appropriate design and replacement with minimal impact on park use.
9. Use local native plants for revegetation.
10. Develop and implement construction practices, including scheduling, to limit impacts to wildlife, wildlife corridors, and visitor use areas within public parks.
11. For temporary unavoidable loss of park and recreation facility uses, consider providing compensation.

The mitigation strategies described above would substantially lessen or avoid this impact; however, sufficient information is not available at the program level to conclude with certainty that mitigation would reduce this impact to a less-than-significant level in all circumstances. Therefore, at the programmatic level, the potential for impacts to parks and recreational facilities is considered significant.

Planning efforts would be undertaken as a part of the project-level documentation phase to minimize harm to the Section 4(f) and 6(f) resources. This is anticipated to include measures that may be taken to mitigate potential adverse environmental impacts, such as beautification measures, replacement of land or structures or their equivalents on or near their existing site(s), tunneling, cut and cover, cut and fill, treatment of embankments, planting, screening, creating wildlife corridors, acquisition of land for preservation, installation of noise barriers, and establishment of pedestrian or bicycle paths. Other potential mitigation strategies could be identified during the project-level public review process.

3.16.7 Subsequent Analysis

The Section 4(f) and 6(f) evaluation process would be more focused at the project-level. Given the broad focus of analysis for this Program EIR/EIS, the primary goal for project-level analysis would be to identify Section 4(f) and 6(f) resources and potential adverse effects in greater detail, any uses that may occur, the existence of potential prudent and feasible alternatives, and potential mitigation measures.

The following items would be included in the Section 4(f) and 6(f) evaluations at the project level.

- Detailed physical descriptions of a specific portion of the proposed HST system (including plans and profiles).
- Updated list of all Section 4(f) and 6(f) recreation resources (including publicly owned conservation easements) in proximity to the proposed alignment alternative centerlines and project components, using the most recent mapping available, such as annually updated Thomas Bros. maps, general plans, state Web sites, and local jurisdiction web sites.
- Updated list of NRHP-listed and NRHP-eligible cultural resources. As part of detailed cultural resources studies required for project-level environmental review (see Section 3.12.7), all previously identified potentially eligible resources would be further evaluated to determine NRHP eligibility. NRHP-eligible resources would be carried forward to the project-level Section 4(f) and 6(f) evaluation. Field reconnaissance would be needed to complete the required Section 4(f) inventory sheets.
- List of the CRHR-listed and eligible resources and field reconnaissance to provide a complete inventory and description of these resources.
- Descriptions of uses and functions of each Section 4(f) and 6(f) resource, including location map; size; services and facilities; annual patronage; unique qualities; relationship to other lands in the project vicinity; owner/operator; other relevant information regarding the resource; and explanation of the significance of the properties as determined by federal, state, regional, or local officials with jurisdiction over the resource.
- Detailed descriptions of the proposed uses of and potential adverse effects on Section 4(f) and 6(f) resources and of the methods used to identify them. Specific potential impacts on each resource would be identified, including proximity impacts as a result of impacts on ambient noise, air quality, transportation, and visual resources.
- Identification and refinement of strategies to avoid or minimize use of and adverse effects on Section 4(f) and 6(f) resources by narrowing rights-of-way/disturbance limits, realigning/relocating project features, and developing other alignment adjustments. These strategies would analyze, as appropriate, the technical feasibility of possible mitigation, including cost estimates with figures showing percentage differences in total project costs, possibility of community or ecosystem

disruption, and other potential significant adverse environmental impacts of each alternative. These cost estimates should also show the financial, social, or ecological costs or potential adverse environmental impacts of each alternative, as well as any unique problems and extraordinary magnitudes of impacts.

- Documentation of consultation with the affected local jurisdictions and owners/operators of the identified Section 4(f) and 6(f) resources. This would include documentation of concurrence or efforts to obtain concurrence from the public official or officials having jurisdiction over the Section 4(f) and 6(f) resources and documentation of the planning to minimize harm to the affected resources. (Refer to Chapter 11, "Organization, Agency, and Business Outreach before Draft Program EIR/EIS Release," for additional discussion of these consultations.) In addition to the mitigation proposed, the Section 4(f) and 6(f) evaluation should document the National Park Service's tentative position relative to any proposed Section 6(f) conversion and should address the need for replacement lands under federal and California law (Federal Highway Administration 1987).